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THE ROLE OF INFORMATION AND TRADING VOLUME ON INTRADAILY AND WEEKLY RETURNS PATTERNS IN THE SPANISH STOCK MARKET

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Abstract

The aim of this work is to document new results about intradaily and weekly effects in the Spanish stock market, relating the returns in the stock index, during trading and non trading hours, to the arrival of information and daily trading volume. Weekly and intraday patterns are examined using the index Ibex-35 transaction data. Twenty-three months of transaction records of the Ibex-35, at 15-minutes intervals, were examined in an attempt to better understand the day-of-the week effect and trading return patterns, to further characterize systematic weekly and intradaily price patterns. Several results were found:

-There are cross-sectional differences in weekday patterns found in both trading and non-trading period returns. These patterns are pervasive over time and for different trading volumes. We found a positive relation between opening volume and unexpected overnight volatility, which is reflected in a higher standard deviation of returns, during the first to first and half hours of trading.

-There are significant weekday differences in intraday trading returns in the first four hours of trading. On Monday (and Wednesday) returns are negative, while on the other weekdays, returns in this interval, are positive.

Key Words: Monday effect, Intradily returns in stock indexes, information and trading volume

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1.- Introduction.

The aim of this study is to document new results about intradaily and weekly effects in the Spanish stock market, relating the returns in the stock index, during trading and non trading hours, to the arrival of information and daily trading volume. Weekly and intraday patterns are examined using the index Ibex-35 transaction data.

The link between information and changes in assets prices is central to financial economics. A fundamental tenet of market efficiency is that investors react to new information as it arrives, resulting in price changes that reflect investors' expectations of risk and return. Recent studies in market microestructure (e.g., Berry and Howe, 1994) explore how price-volume relations are formed in financial markets, with emphasis on intraday and weekly trading.

One of the most characteristics patterns in weekly trading patterns is the day-of-the-week effect, an empirical regularity which refers to the observation than equity returns are not independent from the day of the week. More specifically, the day-of-the-week effect has been refered to the observed negative average return from Friday close to Monday close. For convenience this anormality has been labeled the Monday effect.

Several papers have identified and attempted to explain the Monday effect, but to no avail. The effect was first documented by Osborne (1962), and has subsequently been examined by numerous studies, including those of Cross (1973), French (1980), Gibbons and Hess (1981), Lakonishok and Levi (1982), French and Roll (1986), Harris (1986) and Admati and Pfleiderer (1988), among many others.

The purpose of this paper is, therefore, to more fully characterize the day-of-the-week effect by studying intraday returns of the index Ibex-35 of the Spanish stock market, measured over 15-minute intervals to show that they differ by weekday and trading volume. These data have made possible the simultaneous analyses of, both, the cross-sectional and intertemporal characteristics of the effects. Previous studies have stablished the value of both types of analyses, yet none has determined whether cross-sectional and intertemporal effects interact. This study shows that patterns in time-descomposed returns vary by trading volume. Use of data by 15-minutes interval also allows a more precise characterizacion of the timing of systematic return patterns within the trading day.

The remainder of the paper is organized into five sections. Section 2 briefly describes the data set of the paper and explain how the index Ibex-35 was formed and how it works in practice, mimeting the Spanish stock market. Section 3 relates to the

evidende of the non-trading weekend and Monday effects. Section 4 describes the cross-sectional analysis of the decomposition of the daily close-to-close return into trading and non-trading periods. Section 5 links both effects to daily trading volume. Finally, a summary is provided in Section 6.

2.- Data description: The index Ibex-35.

During 1988 and 1989 a survey on the Spanish stock investment industry was completed and a series of studies to create an index (Fiex-35), which would act the underlying instrument for stock index derivatives to be traded in Spain, were under way. On November 1991 the index Fiex-35 changed its name to Ibex-35, only to be designated as the Official Stock Index for Spain.

Ibex-35 is a capitalization-weighted index comprising the 35 most liquid Spanish stocks traded on the continuous and computerized system (CATS) and in December 29, 1989 the index was given the value 3,000.00 at the closing of the market on that date.

Ibex-35 was designed to fulfil the following three requirements:

(i) to behave as a good market indicator,
(ii) to be difficult to manipulate,
(iii) to be calculated continuosly and published in real-time.

The index is an accurate substitute of a diversified portfolio of the Spanish stock market and, as a result, Ibex-35 and the Madrid General Stock Index (IGBM), has shown a very close correlation (98%), since January 1988 (see chart 1). Ibex-35 covers, as well, over 75% of market capitalization and almost 78% of the total market turnover, with less than 10% of the stocks traded on the Madrid Stock Exchange.

Data for this survey has been computed during the twenty-three months between February 1992 and December 1993. For each of the 447 different trading days in the sample period the date, time (15 minute intervals), index value and daily trading volume are, therefore, used. Returns have been computed as [(Vt/Vt-1) - 1] * 100, where Vt is the closing value of the index on day t, and Vt-1 is the closing value of the index on the previous day that the Exchange was open. Thus, returns labelled 'Monday' cover the three day period from Friday closing to Monday closing, in the absence of holidays, and have not been expressed as daily average equivalents.

The value of Ibex-35 is available in real-time through several information vendors and trades continously from 11.00 to 17.00 hours and is calculated by dividing the total index capitalization at moment (t) by the total index capitalization at moment (t-1), according with the following equation:

$$\text{Index}(t) = \text{Index}(t-1) * [\text{Capitalization}(t)/\text{Capitalization}(t-1)] + J(t)$$

where,

"s"	=	stocks; s = 1,....., 35
"t"	=	time
Shares (s,t)	=	numer of shares "s" at "t"
Price (s,t)	=	last price paid for "s" at "t"
Value	=	value of shares (s,t) * price (s,t)
Capitalization	=	sume of "s" values at "t"
Index (t)	=	index value at "t"
J (t)	=	adjustment for stock issues

In order to ensure that the 35 stocks that form Ibex-35 are the most liquid ones, the index is revised every six months coinciding with the natural semesters, ie. January and July. The 35 stoks and their weight in the index for the first semester of 1995, are listed in the following table:

[Here Table 1]

3.- Evidence of the day-of-the-week effect.

Evidence of the day-of-the-week effect in stock prices has generally been obtained from studies of daily close-to-close returns in broad market indexes. Although these studies conclusively identify sistematic return patterns -in particular, the negative Monday returns- they are unable to fully explain their cause. In an effort to shed additional light on the phenomenon, studies of open-to-close, close-to-open, midday and time dissagregated returns have been undertaken [e.g., Prince (1982), Rogalsky (1984), Keim and Stambaugh (1984), Smirlock and Starks (1986)].

Prince (1982) examined daily returns in the Dow Jones 65 Stock Composite Index, to conclude that the negative Monday effect appears primarily in the close-to-close returns, and only to a lessor extent in returns measured from intraday prices. Although he concludes that the effect may be caused, at least partly, by systematic high Friday closing, he fails to interpret other anormalities.

Rogalsky (1984) descomposes daily close-to-close returns into trading and non-trading day returns in the S&P500 Index, to discover, in contrast to Prince's paper that all the average negative returns from Friday close to Monday close documented in the literature for stock market indexes occurs during the non-trading period from Friday close to Monday open. In addition, average trading day returns (open to close) are identical for all days of the week.

Keim and Stambaugh (1984) examined the daily close-to-close returns of ten market value decile portfolios. They found that the day-of-the-week effects characterize the returns of all size portfolios and that the effects may be more pronounced for small firms. In particular, they showed that close-to-close returns are large for small firms on Fridays.

Smirlock and Starks (1986) analized (from January 1963 to December 1983) hourly returns of the DJIA, to found that intraday patterns related to the day-of-the-week effect have changed over time. In the last part of the sample, they found negative returns early in the day on Monday and positive returns later on.

Jaffe and Westefield (1985) and Condoyanni et al. (1987) among others, have examined the extent to which the day-of-the week effect in markets other than the US may be attributable to correlation (contemporaneous or lagged) between their returns and returns in the US markets. Using classical statistical analysis Jaffe and Westefield (1985, p.441) concluded that investors confront a day-of-the-week effect in their respective stock markets that is independent of the day-of-the-week in the US.

The weekdays' pattern of close-to-close returns in this sample period is similar to that observed in previous studies, as the mean of Monday close-to-close return of the Ibex-35 porfolio is negative. Nevertheless, there is an important difference as Wednesday close-to-close return is also negative, in contrast to the other mean weekday returns, which are positive. The negative returns accrue during non-trading or close-to-open periods, in contrast to the open-to-close trading period that has a positive return for all days of the week (although only slightly positive on Mondays).

4.- Trading and non-trading period returns and volatilities.

The issue of information driving market relationships is as old as economics. Recently, the role of private information has received greater attention (see e.g. Berry and Howe, 1994). One thrust of current research attempts to explain the higher return volatility during trading hours than during nontrading hours that is documented in several studies. French and Roll (1986), for instance, offer three explanations for higher trading hours volatility: first, public information is greater during trading hours; second, private information is generated during trading hours by informed investors; and third, pricing errors during trading hours increase volatility. Harris (1986) studies of intraday patterns using transaction data show, however, that the major part of stock price moves occurs in the first 45 minutes of trading each day.

To analize that, we provide greater detail on the trading versus nontrading periods of Ibex-35 in Table 1 and Chart 2 and present mean returns and return volatility that are similar to the results of French and Roll (1986), as we find that the volatility of returns is considerably greater during trading periods that during non-trading periods.

Moreover, the pattern of volatility, as measured by the standard deviation of returns by 15-minute periods is U-shaped (see Chart 3), with a strong decrease in the first trading hour of the day (from 11.00 to 12.00) and more levered during the rest of the trading day, for all days of the week. The U-shaped patterns observed here have been previously documented both for return data [Harris (1986) and Wood, McInish and Ord (1985)] and trading volume [Jain and Joh (1988) and Foster and Viswanathan (1993)].

French and Roll's (1986) finding of much higher variances during trading periods may be attributed to the large move in prices during the first hour of the trading day, as a consequence of information arrival while markets are closed. In the case of Spain, Bergés and Soria (1990) also studied the open-to-close and close to-open volatility of the Spanish Stock Market during the Gulf crisis, to conclude, as well, that volatility was higher during non-trading periods.

However, if we exclude this first hour of trading of the trading-period variances and include it in the non-trading period, as it is due to information accrued overnight, variances may be much more appropiate. This adjustment, according to Berry and Howe (1994, p. 1333) "would reduce the trading period variances and increase the non-trading period variances, diminishing support for French and Roll's (1986) private information hypothesis."

Several new observations emerge. Decomposition of close-to-close returns into

trading and non-trading periods indicates that the negative Monday and Wednesday close-to-close return accrues before the market opens, while for the rest of the days, although the close-to-open negative returns are still important, they are not enough to overcome the negative returns observed during non-trading hours.

To further investigate systematic week day differences in open-to-close returns, means were computed, by 15 minutes intervals, of the returns wich accrue within the trading day. The results are presented in Table 2 and cumulative means are plotted by weekday in Chart 4. There is a striking similarity, in the trading pattern, between Monday and the other weekdays in the last two hours of trading (from 15.00 to 17.00). However, the mean return for Ibex-35 in the morning interval between 11.00 and 15.00 hours, is strongly negative on Mondays (-0.124%) and slightly negative on Wednesdays (-0.034%), while in the other weekdays it is positive (0,01%, 0.132% and 0,087%). The weekday pattern observed in this two periods of trading is pervasive both through time and through the cross-section volume.

A closed examination of intraday means for Ibex-35 reveals that the evolution of prices during the trading day is not uniform on any of the weekdays. Mean intraday returns at the beginning and end of the trading day (first and last 15-minutes periods) are five to ten times larger in absolute value that returns that accrue in the middle of the day. These casual observations are confirmed by previous research (see e.g., Harris, 1986).

To summarize, there are week days differences in the pattern of intraday returns within the first three hours of trading. Later in the day, no such week differences are apparent. Further decomposition of the trading-period returns into a series of 15-minute intraday returns reveals that there are only significant differences among weekdays after the first 15-minutes of trading.

On Monday mornings (and more slightly, also on Wednesdays) prices trend to drop, while on the other weekdays, they remain steady or rises. Otherwise, price patterns are similar on all weekdays. The most striking similarity is a strong tendency for prices to rise in the first and last 15-minute periods of trading. The latter result might suggest that, apparently, the return-generating processes for the first few and last transactions of the day are different from those which generate the mid-day transaction returns.

The results indicate that there are systematic time-series patterns in mean intraday returns which are common to all the weekdays. Even within weekday trading periods, prices do not evolve at equal rates. Further research will be necessary to identify the origin of these patterns and to determine whether traders can profit by considering time-of-day effects when planning their transactions.

5.- Trading volumen and the day-of-the-week effect.

Unlike previous research this paper analyzes trading and non-trading period returns by daily trading volume, that will act as a measure of market activity. We measure trading volume as the amount traded on Ibex-35 on a given period of time, in five blocks (from less than 10 to more than 25 thousand million Ptas.). The results (Table 3 and Chart 5) show that although the mean close-to-open and Monday and Wednesday close-to-close are both negative, their magnitudes vary by trading volume. For small volumes (less than 15.000 million Pesetas) total close to close returns are negative, but for larger volumes the close-to-open and open-to-close returns increases with volume and turns to positive values.

Trading volume differences in the decomposition of negative Monday close-to-close return may have implications for theories which try to relate negative Monday returns to macroeconomic information. If macroeconomic information generated over the weekend were the cause of negative Monday returns, why would that information be fully incorporated into the indexes when markets open trading on Monday, but not in cases when trading volume is larger. The same results can be observed for the remaining days of the week, except on Wenesday. Overnight close-to-open returns are negative, when next day trading volume is small, but turns to positive for larger volumes. It appears unlileky that the day of the week effect would be related to macroeconomic information, unless that information affects nexts day trading volume.

To test for cross-sectional differences among returns during the trading day for various trading volumes, an analisys of 15-minutes period returns and volatilities, similar to those used to analyze the day-of-the-week effect, was conducted (see Table 4 and Chart 6). The intraday mean pattern returns by volume are very similar to those observed for the different days of the week, with an increase of returns during the first and last 15 minutes of trading. However, there is a close correlation between trading volume and the mean return of Ibex-35, reflecting the fact that higher demand increases the index value. For trading volumes over 25.000 million Ptas., the returns on Ibex-35 are much higher at any time of the trading day, that for lower trading volumes, with a strong increase at the begining of the day (first 30 minutes), reflecting the arrival of information prior to market openning (see Chart 8).

The U-patterns of volatility during the day, for different trading volumes, are very similar to those obtained for daily trading returns. There are no sharp differences in the standard deviation of returns among trading volumes, but during the first hour and a half of trading, volatility is much higher than during the rest of the day, as the arrival of new information to the market makes prices more difficult to predict (Chart 7).

The size decomposition in trading volume by week day close-to-open and open-to-close returns (see Table 5) can explain the differences mentioned above. In almost every case, returns are higher during trading hours (open-to-close) every day and for every trading volume, reflecting lower expectations of investors during non-trading hours, due to the lack of information. Another important characteristic of the market, is that returns almost uniformily increased with trading volume, during trading and non-trading hours, as a consequence of increased demand.

6.- Summary and concluding remarks.

This paper examined trading and non-trading period returns and volatilities of the Index Ibex-35, at 15-minutes intervals, in an attempt to better understand the day-of-the week effect and trading return patterns, related to the timing of information arrival and daily trading volume, during trading and non-trading hours.

Twenty-three months of the complete transaction records of the Ibex-35 were examined to further characterize systematic weekly and intradaily price patterns. Several results were found:

-There are cross-sectional differences in weekday patterns found in both trading and non-trading period returns. These patterns are pervasive over time and for different trading volumes. We found a positive relation between opening volume and unexpected overnight volatility, which is reflected in a higher standard deviation of returns, during the first to first and a half hour of trading.

-There are significant weekday differences in intraday trading returns in the first four hours of trading. On Monday (and Wednesday) returns are negative, while on the other weekdays, returns in this interval, are positive.

-There are systematic intraday return patterns which are common to all of the weekdays. Returns are very large at the beginning and the end of the trading day. Returns are, also, very similar during the last two trading hours.

-It is unlikely that the weekend effect, in this sample, is caused entirely by high Friday closing prices, but for new information arriving and accumulated during the weekend.

Trading strategies based only on these weekly and intradaily patterns would, usually, not be profitable because of transaction costs. However, further research will be necessary before any conclusions can be made on this respect.

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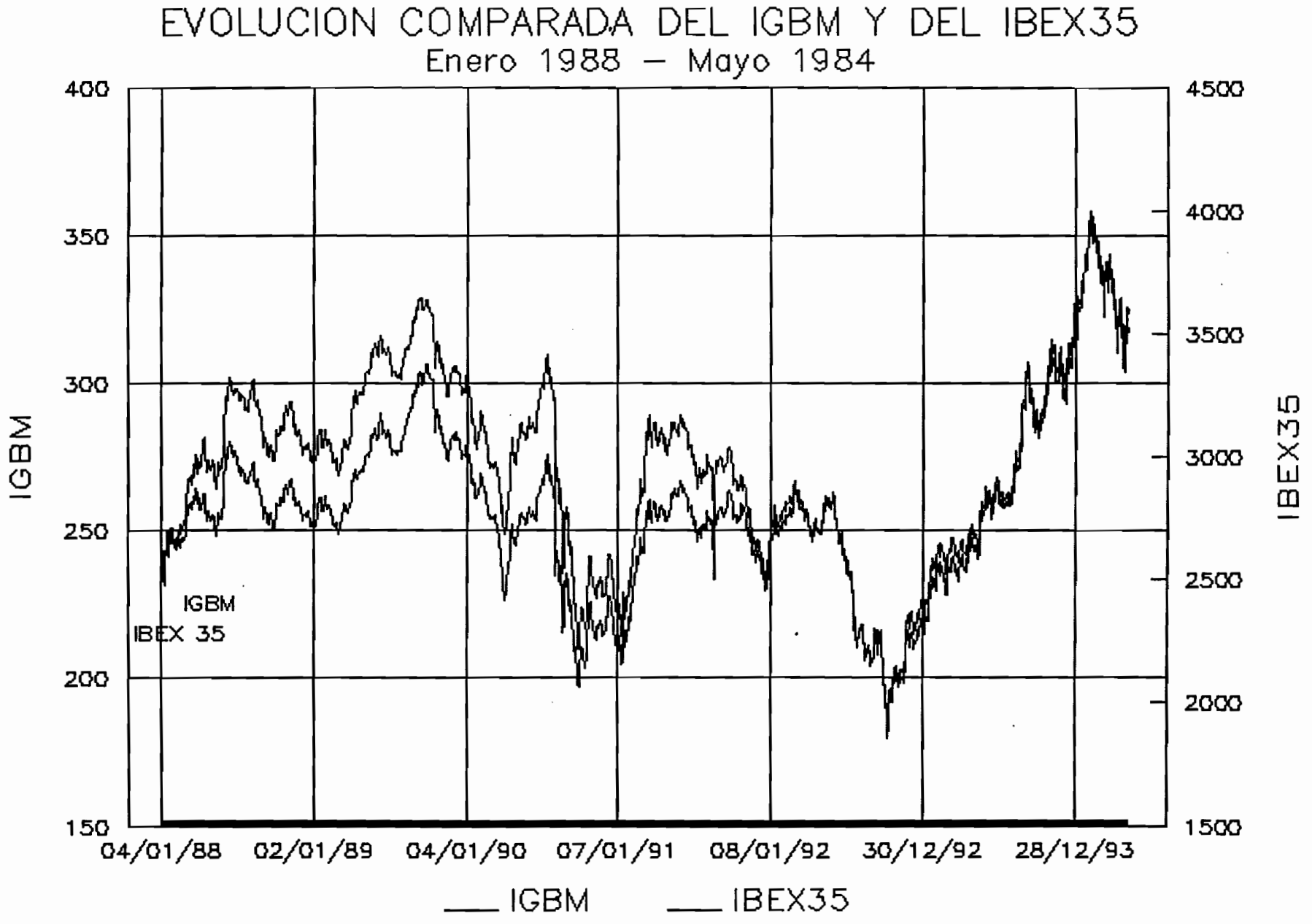
EVOLUCION COMPARADA DEL IGBM Y DEL IBEX35
Enero 1988 – Mayo 1984
400
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IGBM
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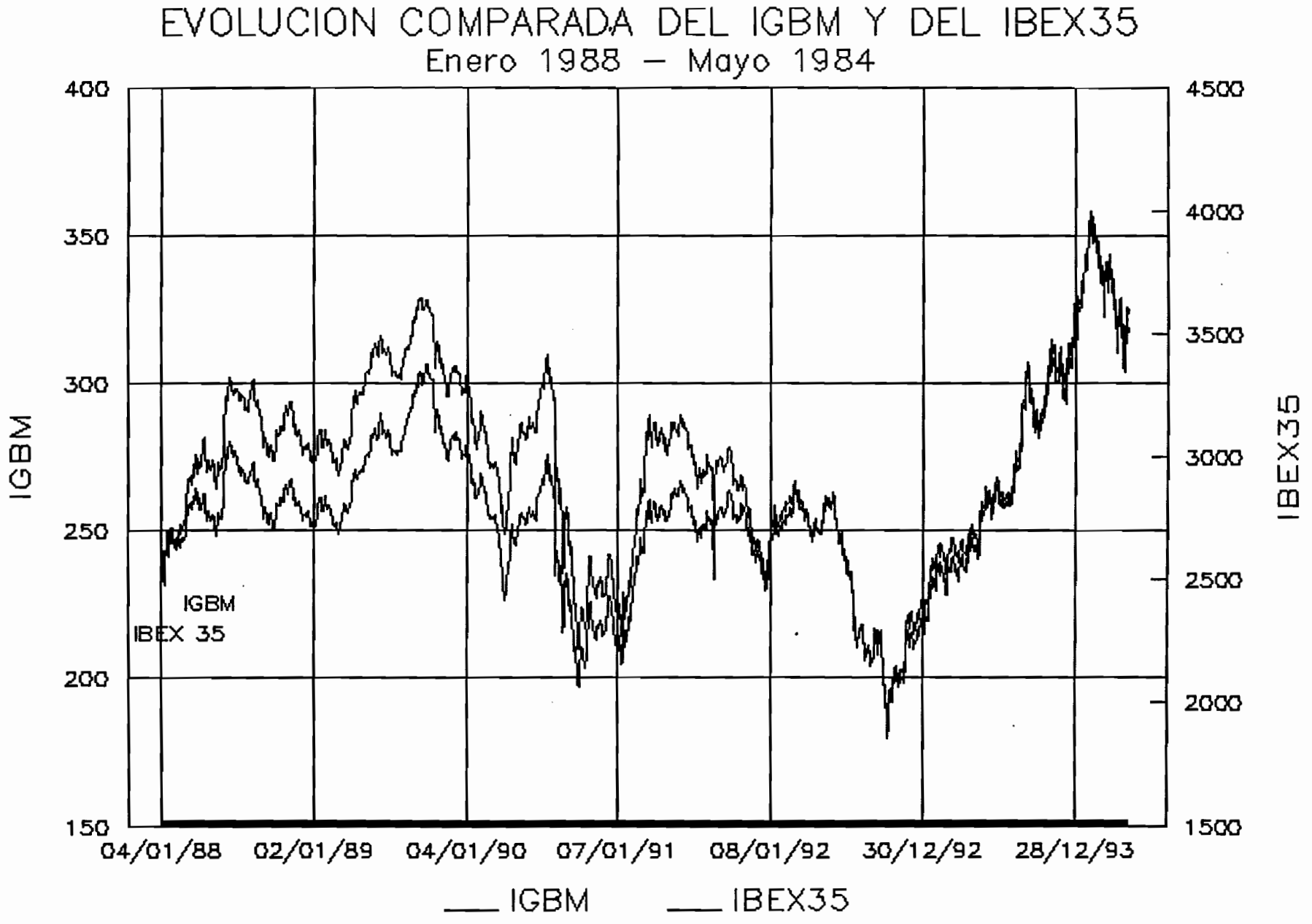
2500
2000
1500
IBEX35
IGBM
IBEX 35
04/01/88
02/01/89
04/01/90
07/01/91
08/01/92
30/12/92
28/12/93
IGBM
IBEX35

MEDIA Y DESVIACIÓN STANDARD POR DIA DE LA SEMANA

	Cier.-Aper.	Aper.-Cier.	Cier.-Cier.
MEDIA	-0,09976	0,156974	0,058099
VARIANZA	0,29902	0,723715	1,168041
DEV.STD.	0,546827	0,850715	1,080759
MEDIAS			
LUNES	-0,19332	0,001458	-0,19079
MARTES	-0,04566	0,157795	0,112661
MIERCOL.	-0,16704	0,08629	-0,0803
JUEVES	-0,0522	0,273255	0,223525
VIERNES	-0,04235	0,261685	0,219244
DES. STD.			
LUNES	0,586422	0,792733	1,088371
MARTES	0,453186	0,841611	1,016717
MIERCOL.	0,563359	0,846387	1,073736
JUEVES	0,53835	0,955381	1,189948
VIERNES	0,563378	0,772356	0,957475


EVOLUCION COMPARADA DEL IGBM Y DEL IBEX35
Enero 1988 – Mayo 1984
400
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IBEX35
IGBM
IBEX 35
04/01/88
02/01/89
04/01/90
07/01/91
08/01/92
30/12/92
28/12/93
IGBM
IBEX35

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	Cier.-Aper.	Aper.-Cier.	Cier.-Cier.
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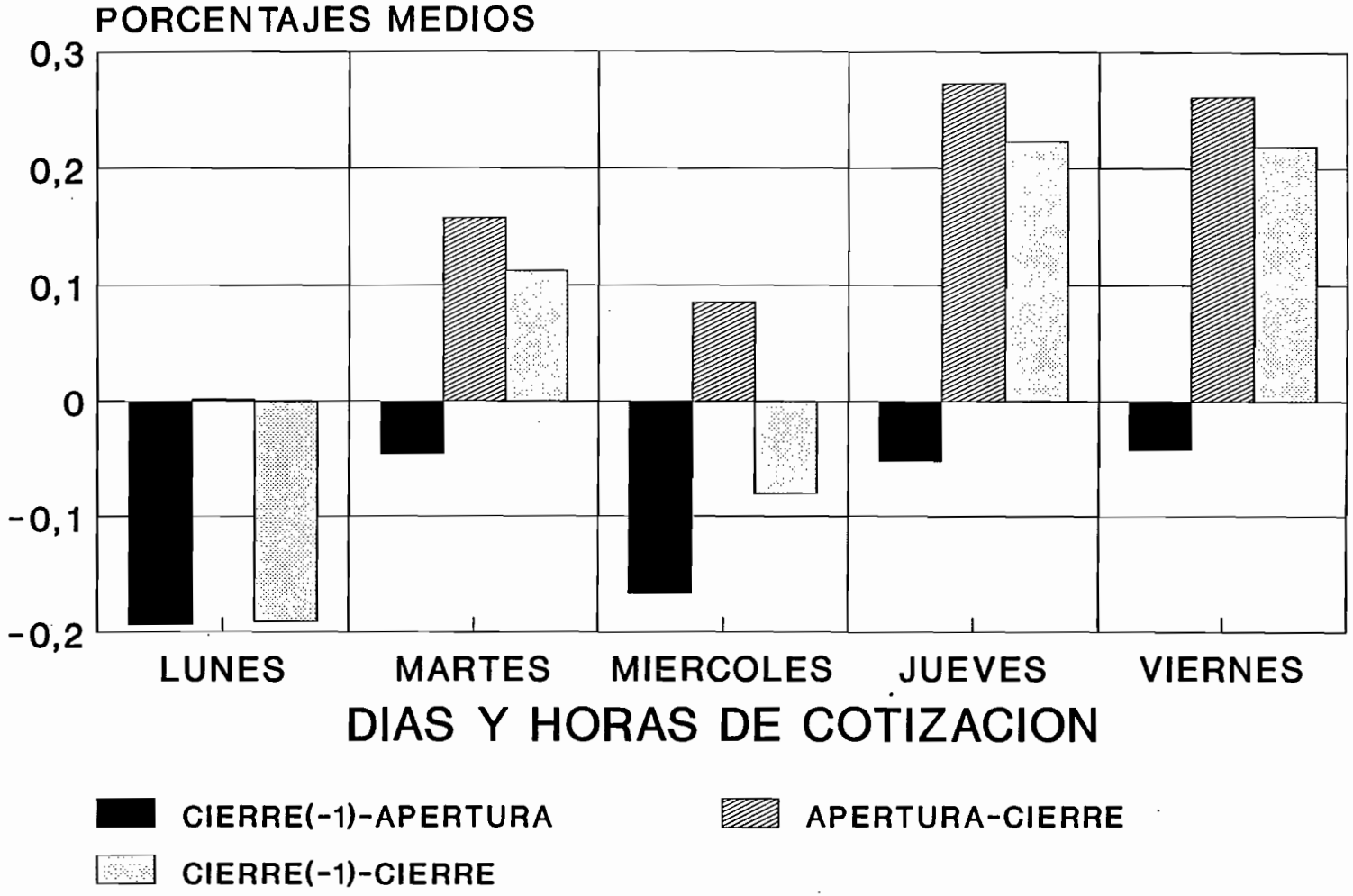
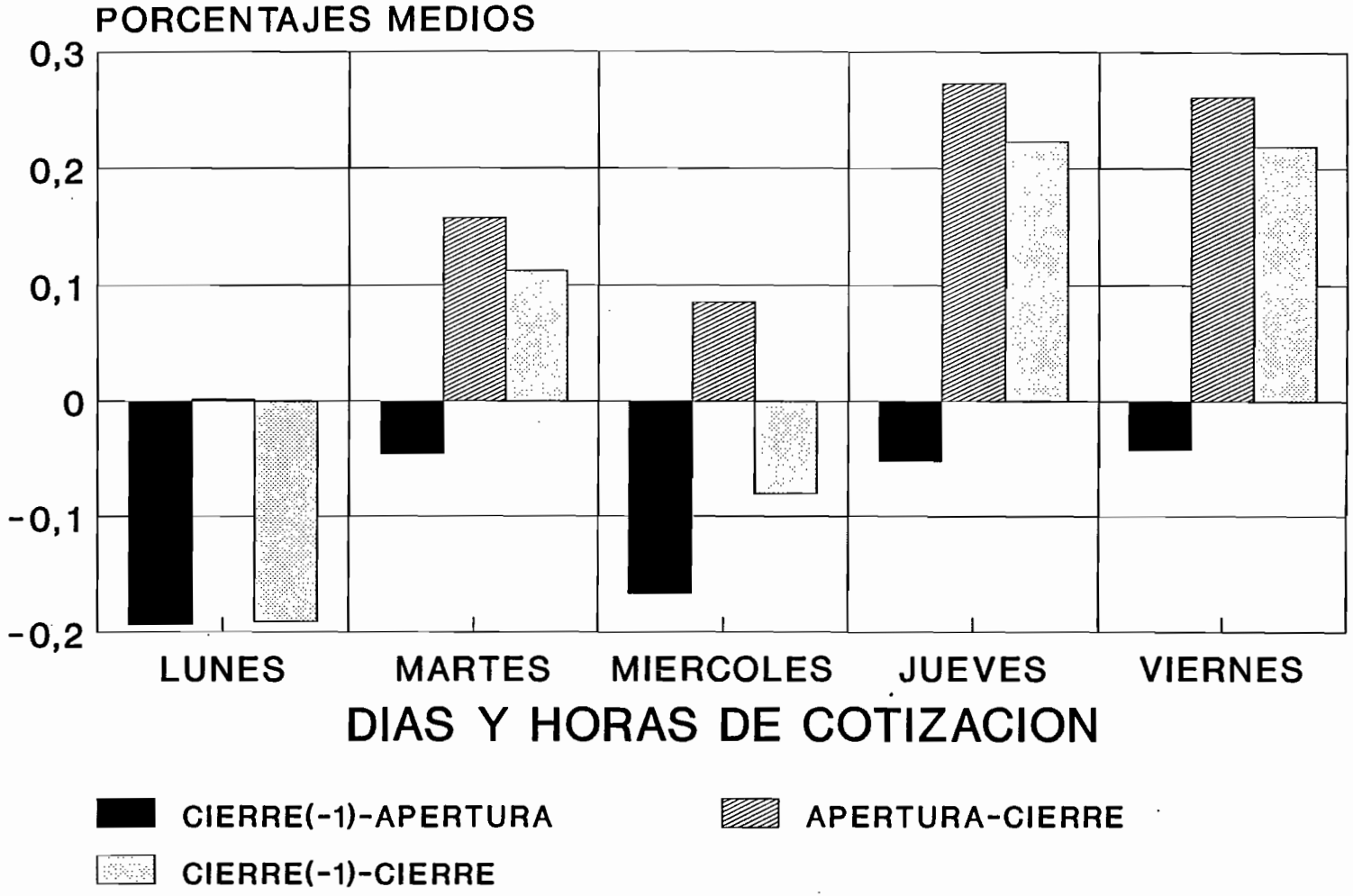
VIERNES	0,563378	0,772356	0,957475

RENTABILIDADES DIARIAS DEL IBEX35



Febrero 92-Diciembre 93

RENTABILIDADES DIARIAS DEL IBEX35



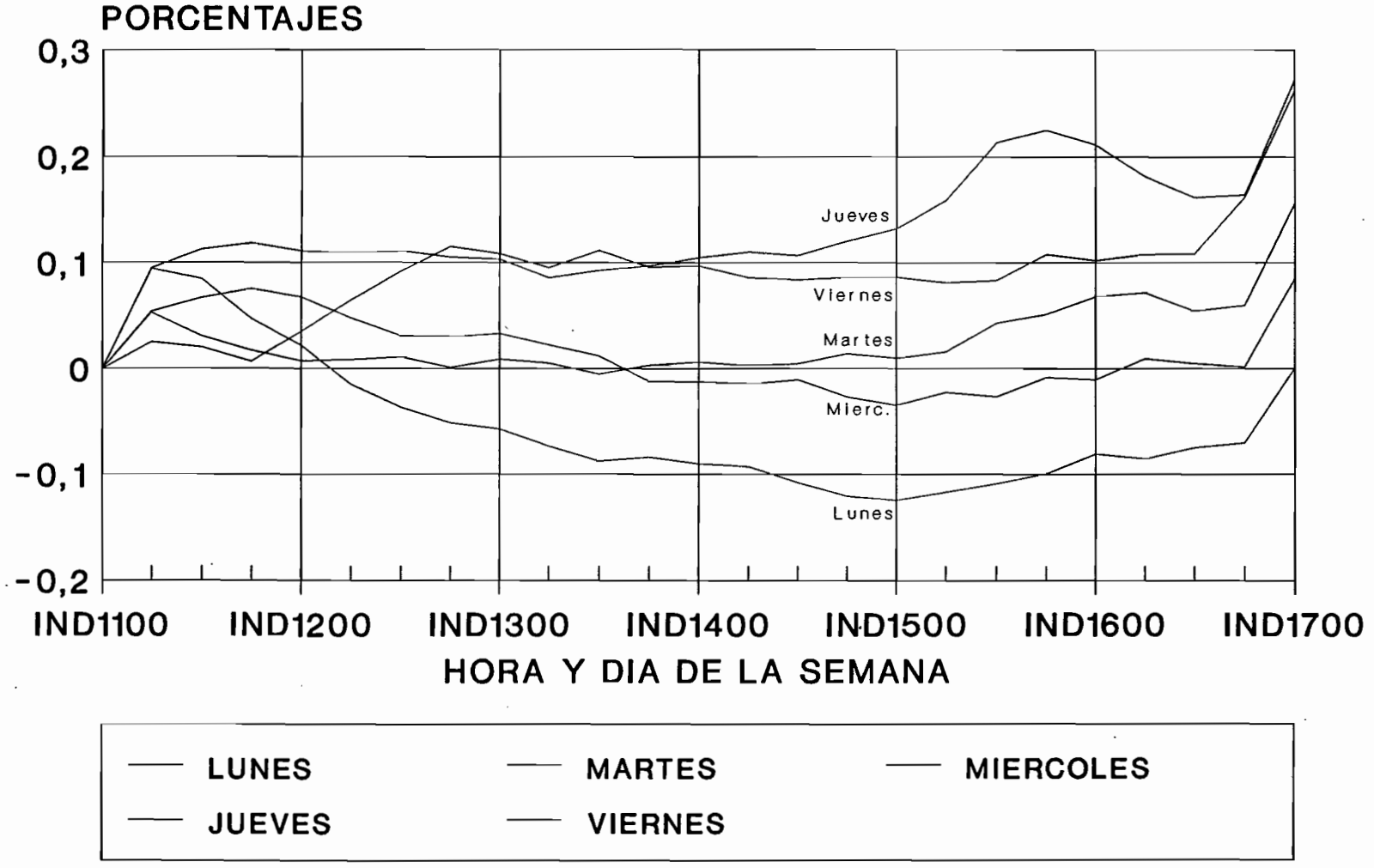
Febrero 92-Diciembre 93

MEDIA Y DESVIACIÓN STANDARD DE LOS RENDIMIENTOS INDIVIDUALES Y ACUMULADOS

	IND1100	IND1115	IND1130	IND1145	IND1200	IND1215	IND1230	IND1245	IND1300	IND1315	IND1330	IND1345	IND1400	IND1415	IND1430	IND1445	IND1500	IND1515	IND1530	IND1545	IND1600	IND1615	IND1630	IND1645	IND1700
MEDIA	-0,09945	0,0841	-0,00096	-0,00978	-0,00436	-0,00549	-0,00106	-0,00155	-0,00081	-0,01219	-0,00229	-0,00491	0,00108	-0,00288	-0,0026	-0,00067	-0,00078	0,009322	0,017602	0,014456	0,002511	-0,0009	-0,00623	0,01267	0,092019
VARIANZA	0,299125	0,147536	0,065179	0,044141	0,033947	0,033913	0,020551	0,013709	0,017609	0,011616	0,010323	0,008874	0,010032	0,008614	0,007958	0,007812	0,008943	0,008453	0,017488	0,018947	0,017583	0,022842	0,019828	0,022297	0,025851
DEV.STD.	0,546923	0,384104	0,255302	0,210099	0,184247	0,184156	0,143358	0,117085	0,132698	0,107779	0,101603	0,0942	0,100158	0,081326	0,089206	0,088384	0,094586	0,080331	0,132241	0,137649	0,1326	0,151136	0,140813	0,149321	0,160158
MEDIAS																									
LUNES	-0,19332	0,094412	-0,00956	-0,03757	-0,02518	-0,03729	-0,02156	-0,01475	-0,00576	-0,01605	-0,01396	0,003595	-0,00847	-0,00251	-0,01537	-0,01274	-0,00361	0,007302	0,008079	0,009454	0,018755	-0,00464	0,010527	0,004752	0,070968
MARTES	-0,04566	0,052778	-0,02182	-0,01324	-0,01005	0,001118	0,002483	-0,00998	0,007907	-0,00387	-0,01045	0,008207	0,003195	-0,00365	0,00247	0,009125	-0,00414	0,005955	0,027248	0,008236	0,016654	0,003658	-0,01725	0,005625	0,096519
MIERCOL.	-0,16704	0,054075	0,012937	0,008739	-0,00818	-0,01995	-0,01678	-0,00077	0,002962	-0,0106	-0,01038	-0,02396	-0,00078	-0,00212	0,004505	-0,01632	-0,0077	0,011764	-0,00402	0,018297	-0,00232	0,02012	-0,00492	-0,00285	0,083654
JUEVES	-0,05065	0,095061	0,017539	0,005716	-0,0072	-0,00223	0,002593	-0,00575	-0,00249	-0,01718	0,008679	0,004114	0,007989	0,005127	-0,00307	0,014026	0,011145	0,026837	0,054528	0,011762	-0,014	-0,02983	-0,02011	0,00258	0,108391
VIERNES	-0,04235	0,02517	-0,00445	-0,0137	0,028122	0,030106	0,02738	0,022931	-0,00678	-0,0133	0,016294	-0,01587	0,001284	-0,01123	-0,00198	0,002458	0,000368	-0,00538	0,002206	0,024252	-0,00579	0,005713	0,001045	0,053095	0,100003
DES. STD.																									
LUNES	0,588422	0,316139	0,256587	0,18045	0,149054	0,193017	0,149328	0,098078	0,108046	0,075019	0,081019	0,070482	0,084377	0,073592	0,073783	0,070823	0,076191	0,087081	0,112701	0,110699	0,11941	0,14471	0,151178	0,133698	0,153243
MARTES	0,453186	0,306124	0,242423	0,174176	0,14834	0,173493	0,126551	0,106808	0,125586	0,098884	0,079545	0,070206	0,067173	0,062564	0,074276	0,074296	0,088037	0,076667	0,097652	0,194688	0,161277	0,120423	0,150419	0,14175	0,144139
MIERCOL.	0,563359	0,376501	0,201653	0,201162	0,140935	0,210053	0,133711	0,127232	0,098653	0,135862	0,105579	0,107547	0,083894	0,068059	0,067284	0,081637	0,063636	0,081084	0,085623	0,10859	0,128982	0,159365	0,11214	0,164092	0,151867
JUEVES	0,538696	0,416513	0,305798	0,256511	0,270842	0,164558	0,158329	0,109431	0,153629	0,110615	0,117446	0,102269	0,158054	0,108238	0,13147	0,113102	0,094717	0,079021	0,198777	0,130167	0,124222	0,171511	0,140318	0,149337	0,156147
VIERNES	0,563378	0,472311	0,257469	0,222883	0,174351	0,168689	0,141564	0,135307	0,16426	0,107583	0,113644	0,106927	0,079193	0,086489	0,081925	0,090983	0,133651	0,091376	0,12946	0,125422	0,121462	0,149709	0,144812	0,148238	0,188678
MED. ACU																									
LUNES	0	0,094412	0,084849	0,047278	0,022095	-0,0152	-0,03676	-0,05151	-0,05727	-0,07332	-0,08728	-0,08369	-0,09016	-0,09267	-0,10805	-0,12079	-0,1244	-0,1171	-0,10902	-0,09957	-0,08081	-0,08546	-0,07493	-0,07018	0,000792
MARTES	0	0,052778	0,030862	0,017623	0,007577	0,008696	0,011178	0,001201	0,009107	0,005242	-0,00521	0,002994	0,00819	0,002539	0,005009	0,014133	0,009997	0,015952	0,0432	0,051437	0,068091	0,071749	0,054494	0,06012	0,156638
MIERCOL.	0	0,054075	0,067012	0,075751	0,067566	0,047613	0,030828	0,030062	0,033024	0,022423	0,012041	-0,01192	-0,0127	-0,01462	-0,01031	-0,02664	-0,03434	-0,02258	-0,0266	-0,0083	-0,01062	0,0095	0,004582	0,001731	0,085384
JUEVES	0	0,095061	0,1126	0,118316	0,111112	0,108879	0,111472	0,105724	0,103233	0,088057	0,092735	0,096849	0,104818	0,109945	0,106877	0,120904	0,132048	0,158886	0,213413	0,225175	0,211179	0,181545	0,161434	0,163994	0,272385
VIERNES	0	0,02517	0,020721	0,007024	0,035148	0,065252	0,092632	0,115583	0,108805	0,095507	0,111801	0,095928	0,097212	0,085984	0,084009	0,086466	0,086834	0,081454	0,083659	0,107911	0,102124	0,107836	0,108881	0,161978	0,26198

RENDIMIENTOS ACUMULADOS MEDIOS DEL IBEX

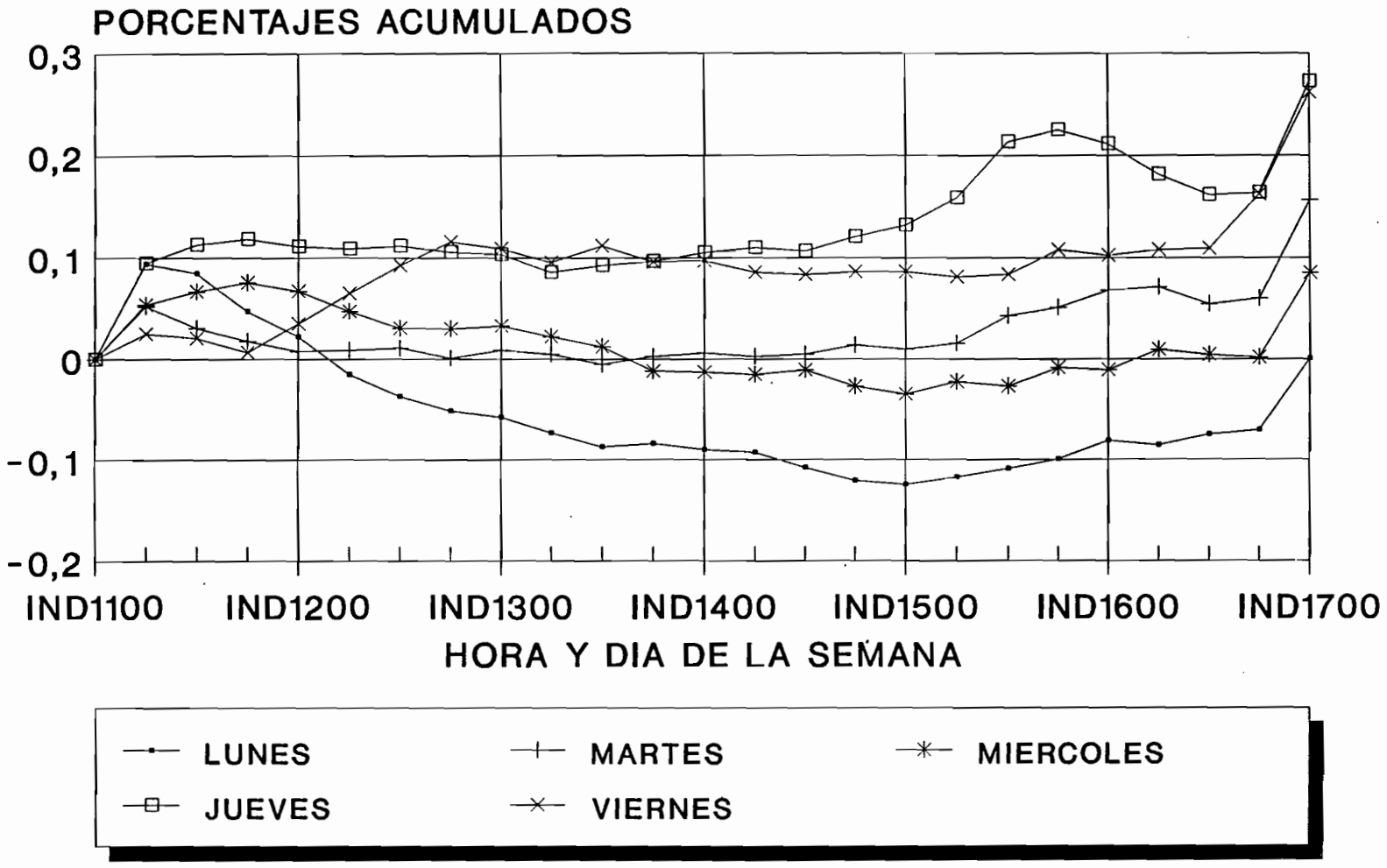
(Datos diarios con intérvalos de 15m.)



Febrero 92-Diciembre 93

RENDIMIENTOS ACUMULADOS MEDIOS DEL IBEX

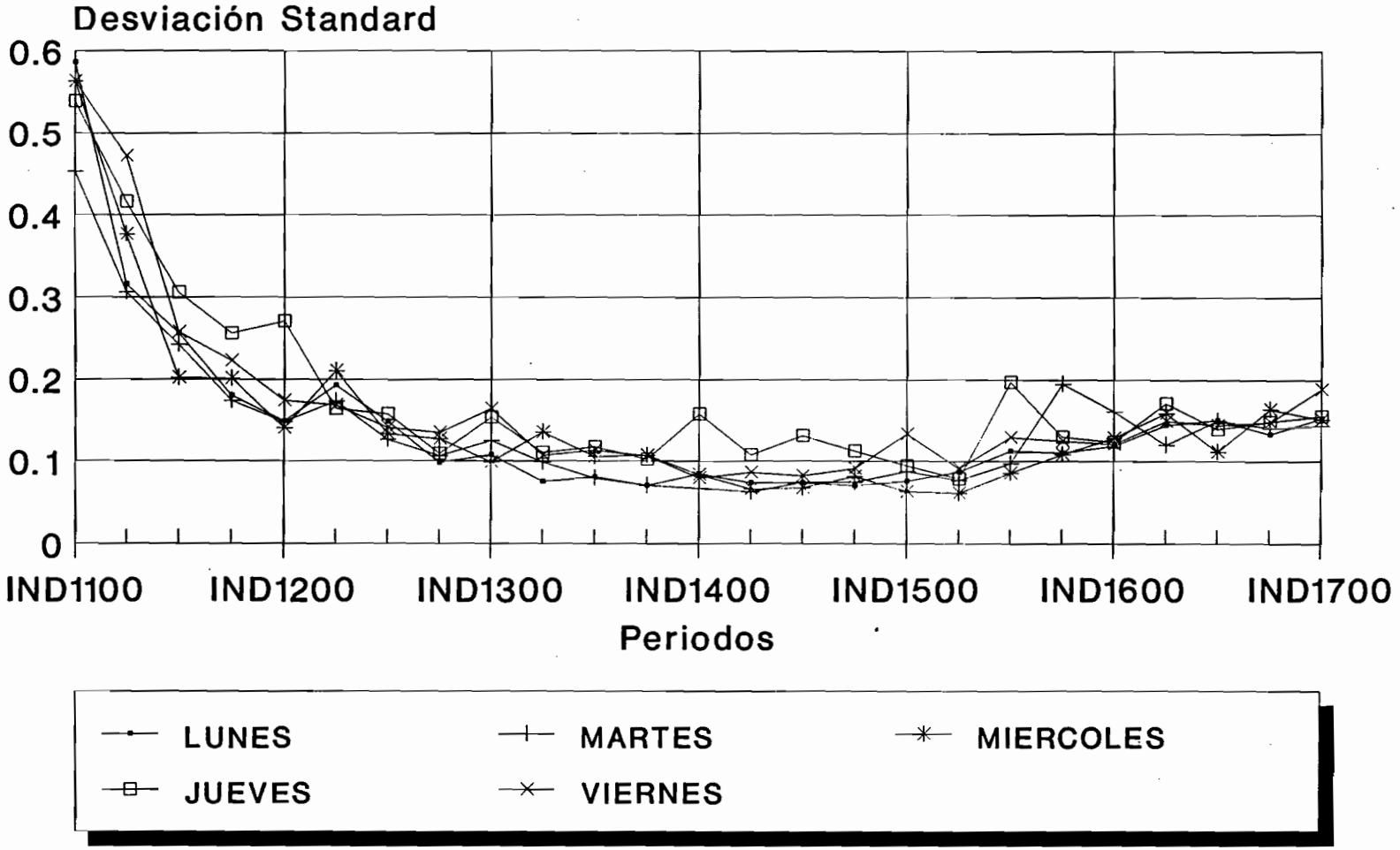
(Datos diarios con intérvalos de 15 m.)



Febrero 92-Diciembre 93

EVOLUCION DE LA VOLATILIDAD DEL IBEX35

(Datos diarios con intervalos de 15 m.)



Febrero 92-Diciembre 93

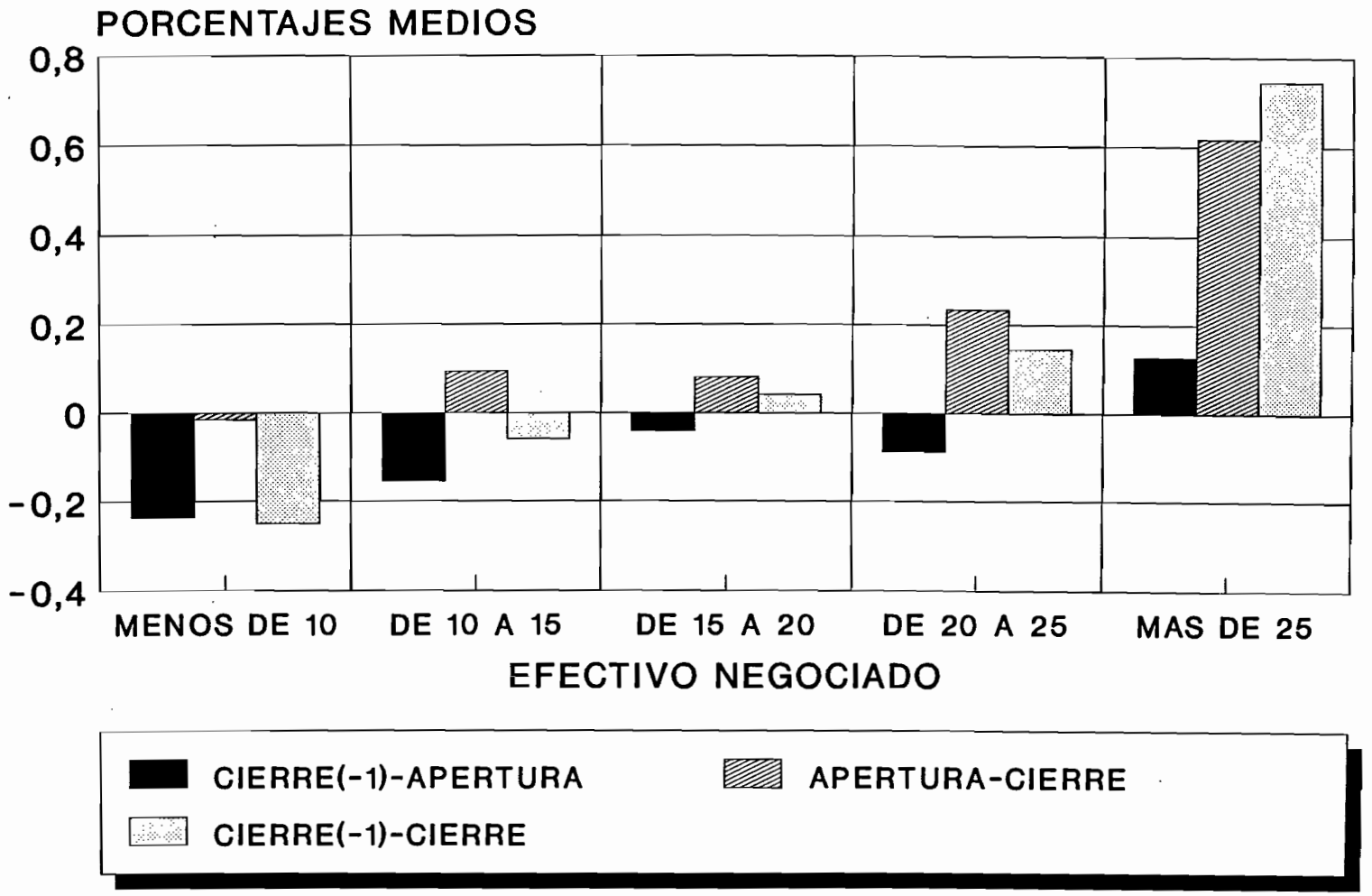
MEDIA Y DESVIACIÓN STANDARD POR VOLUMEN

	Cier.-Aper.	Aper.-Cier.	Cier.-Cier.
MEDIA	-0,09945	0,156974	0,058099
VARIANZA	0,299125	0,723715	1,168041
DEV.STD.	0,546923	0,850715	1,080759
MEDIAS			
Menos de 10	-0,2363	-0,01545	-0,25113
De 10 a 15	-0,15515	0,094349	-0,05968
De 15 a 20	-0,04046	0,080771	0,041452
De 20 a 25	-0,08812	0,234602	0,144965
Más de 25	0,127224	0,617576	0,74495
DES. STD.			
Menos de 10	0,416249	0,665975	0,856212
De 10 a 15	0,487879	0,753311	1,028283
De 15 a 20	0,551826	0,869763	1,138538
De 20 a 25	0,644038	0,820245	0,90975
Más de 25	0,649055	1,113764	1,239272

En miles de millones de Ptas.

RENTABILIDADES DIARIAS DEL IBEX35

(Volumen negociado en miles de millones)



Febrero 92-Diciembre 93

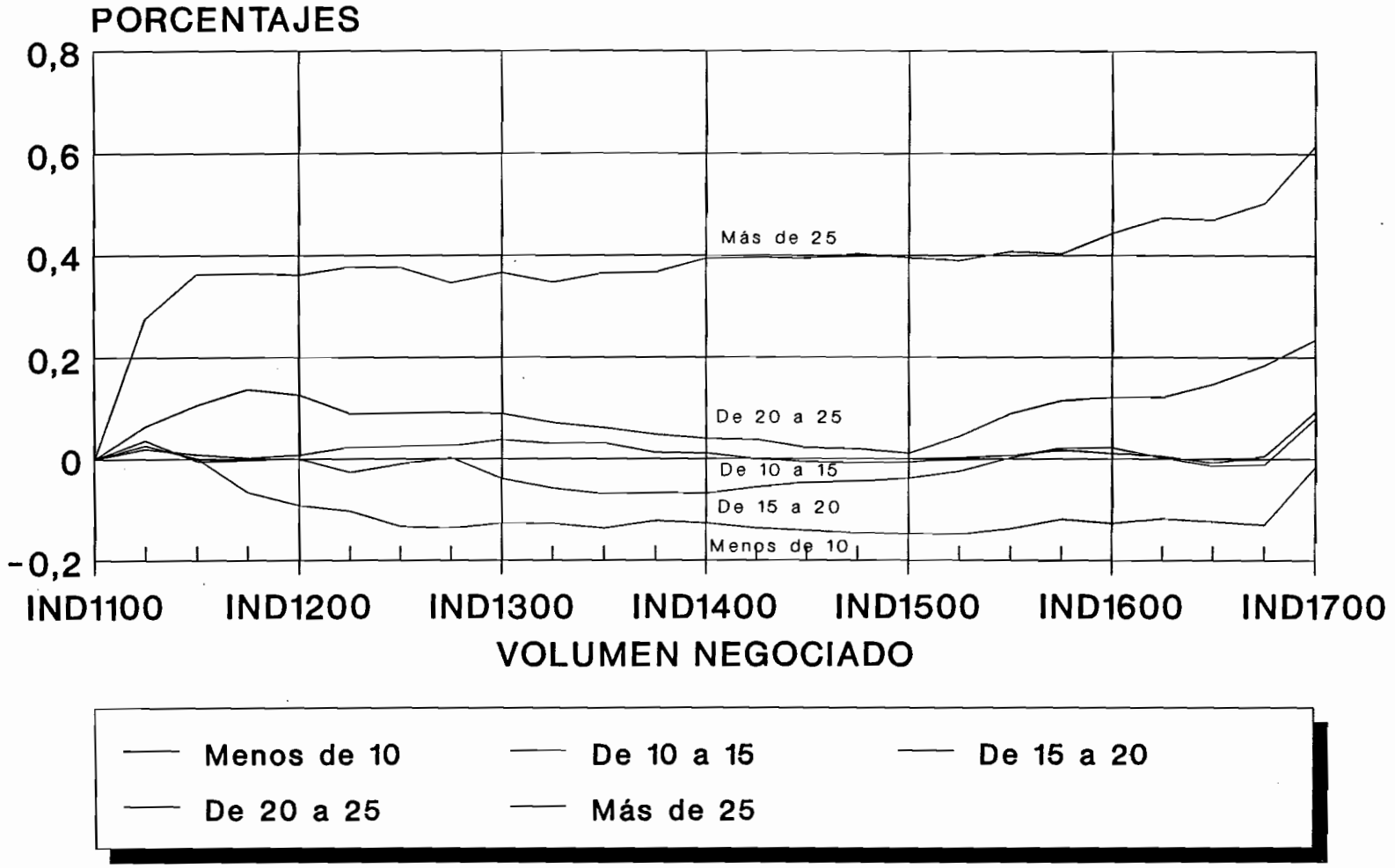
MEDIA Y DESVIACIÓN STAND DE LOS RENDIMIENTOS NORMALES Y ACUMULADOS

	IND1100	IND1115	IND1130	IND1145	IND1200	IND1215	IND1230	IND1245	IND1300	IND1315	IND1330	IND1345	IND1400	IND1415	IND1430	IND1445	IND1500	IND1515	IND1530	IND1545	IND1600	IND1615	IND1630	IND1645	IND1700
MEDIA	-0,09945	0,0641	-0,00096	-0,00976	-0,00436	-0,00549	-0,00108	-0,00155	-0,00081	-0,01219	-0,00229	-0,00491	0,00108	-0,00288	-0,0026	-0,00067	-0,00078	0,009322	0,017602	0,014456	0,002511	-0,0009	-0,00623	0,01267	0,092019
VARIANZA	0,299125	0,147536	0,065179	0,044141	0,033947	0,033913	0,020551	0,013709	0,017609	0,011618	0,010323	0,008874	0,010032	0,006614	0,007958	0,007812	0,008943	0,006453	0,017488	0,018947	0,017583	0,022842	0,019828	0,022297	0,025851
DEV.STD.	0,546923	0,384104	0,255302	0,210099	0,184247	0,184156	0,143358	0,117085	0,132698	0,107779	0,101603	0,0942	0,100158	0,081326	0,089206	0,088384	0,094566	0,080331	0,132241	0,137649	0,1326	0,151136	0,140813	0,149321	0,160158
MEDIAS																									
Menos de 10	-0,2363	0,027006	-0,02559	-0,06733	-0,0254	-0,01128	-0,03037	-0,00307	0,009936	-0,00172	-0,00823	0,014379	-0,00499	-0,00945	-0,00466	-0,00595	-0,00078	-0,0006	0,010883	0,018908	-0,0083	0,008891	-0,00499	-0,00711	0,113885
De 10 a 15	-0,15515	0,019875	-0,01082	-0,00831	0,004689	0,016007	0,001217	0,001323	0,012081	-0,00824	0,001897	-0,01986	-0,00049	-0,0118	-0,00501	-0,00215	0,000463	0,008901	0,004534	0,011161	-0,008	-0,00587	-0,01366	0,013209	0,088567
De 15 a 20	-0,04046	0,037318	-0,04125	0,002061	0,00252	-0,02759	0,017036	0,011657	-0,04116	-0,01938	-0,01099	0,002454	-0,00145	0,012527	0,010644	0,001001	0,006305	0,013207	0,027325	0,020332	-0,00033	-0,02002	-0,0156	0,002095	0,091499
De 20 a 25	-0,08812	0,065207	0,041238	0,031172	-0,01141	-0,03654	0,0031	-0,00125	-0,00207	-0,01818	-0,01002	-0,01273	-0,00791	-0,00233	-0,01573	-0,00254	-0,00904	0,033605	0,044679	0,025538	0,007541	-0,00031	0,02552	0,037083	0,050261
Más de 25	0,127224	0,276311	0,086861	0,002114	-0,00296	0,014987	-0,00071	-0,03009	0,020573	-0,0191	0,017673	0,001858	0,026902	0,002838	-0,00309	0,009654	-0,00798	-0,00604	0,017919	-0,00418	0,039886	0,030295	-0,00383	0,033296	0,112044
DES. STD.																									
Menos de 10	0,416249	0,273202	0,21067	0,16698	0,148531	0,106792	0,107223	0,083684	0,094446	0,085509	0,089552	0,06424	0,068149	0,060745	0,054165	0,057736	0,068247	0,057752	0,061936	0,107278	0,086697	0,101204	0,090242	0,10594	0,136017
De 10 a 15	0,487879	0,305849	0,206832	0,165857	0,148383	0,169346	0,113748	0,099969	0,099203	0,081878	0,1019	0,09974	0,079902	0,063867	0,100933	0,065555	0,109232	0,065732	0,119301	0,101926	0,115636	0,127951	0,122631	0,111714	0,174487
De 15 a 20	0,551826	0,350544	0,279901	0,20341	0,195083	0,257259	0,198472	0,134819	0,179347	0,14818	0,095391	0,091674	0,089174	0,075931	0,107129	0,074017	0,08067	0,079363	0,134125	0,122523	0,134365	0,192474	0,1375	0,14932	0,142882
De 20 a 25	0,844038	0,54558	0,279327	0,242542	0,193692	0,158946	0,098794	0,116372	0,098598	0,1099	0,083597	0,098432	0,089638	0,085871	0,0581	0,10261	0,095411	0,101662	0,178901	0,133812	0,130952	0,104379	0,138883	0,196442	0,13851
Más de 25	0,649055	0,482099	0,323531	0,275091	0,265186	0,169494	0,172659	0,155735	0,170839	0,109633	0,134559	0,107149	0,178437	0,098233	0,08522	0,128748	0,104923	0,108996	0,157095	0,242702	0,201527	0,207844	0,22278	0,213873	0,189062
MED. ACUM.																									
Menos de 10	0	0,027006	0,001416	-0,06591	-0,09131	-0,10258	-0,13296	-0,13603	-0,12609	-0,12781	-0,13604	-0,12166	-0,12665	-0,1361	-0,14077	-0,14671	-0,14749	-0,14809	-0,13721	-0,1183	-0,1266	-0,11771	-0,12269	-0,12981	-0,01594
De 10 a 15	0	0,019875	0,009059	0,002749	0,007438	0,023445	0,024663	0,025986	0,038067	0,029832	0,031729	0,011867	0,011382	-0,00042	-0,00544	-0,00759	-0,00712	0,001777	0,006311	0,017472	0,01147	0,005601	-0,00806	0,005151	0,093718
De 15 a 20	0	0,037316	-0,00394	-0,00188	0,000644	-0,02694	-0,00991	0,00195	-0,03921	-0,0586	-0,06959	-0,06713	-0,06859	-0,05606	-0,04542	-0,04442	-0,03811	-0,02491	0,002419	0,02275	0,022417	0,002393	-0,01321	-0,01111	0,080389
De 20 a 25	0	0,065207	0,106445	0,137617	0,126206	0,08967	0,09277	0,091522	0,089456	0,071274	0,061258	0,048523	0,040609	0,038275	0,022545	0,020002	0,010966	0,044571	0,08925	0,114788	0,12233	0,122018	0,147535	0,184618	0,234879

Volumen en miles de millones de Ptas.

RENDIMIENTOS ACUMULADOS MEDIOS DEL IBEX

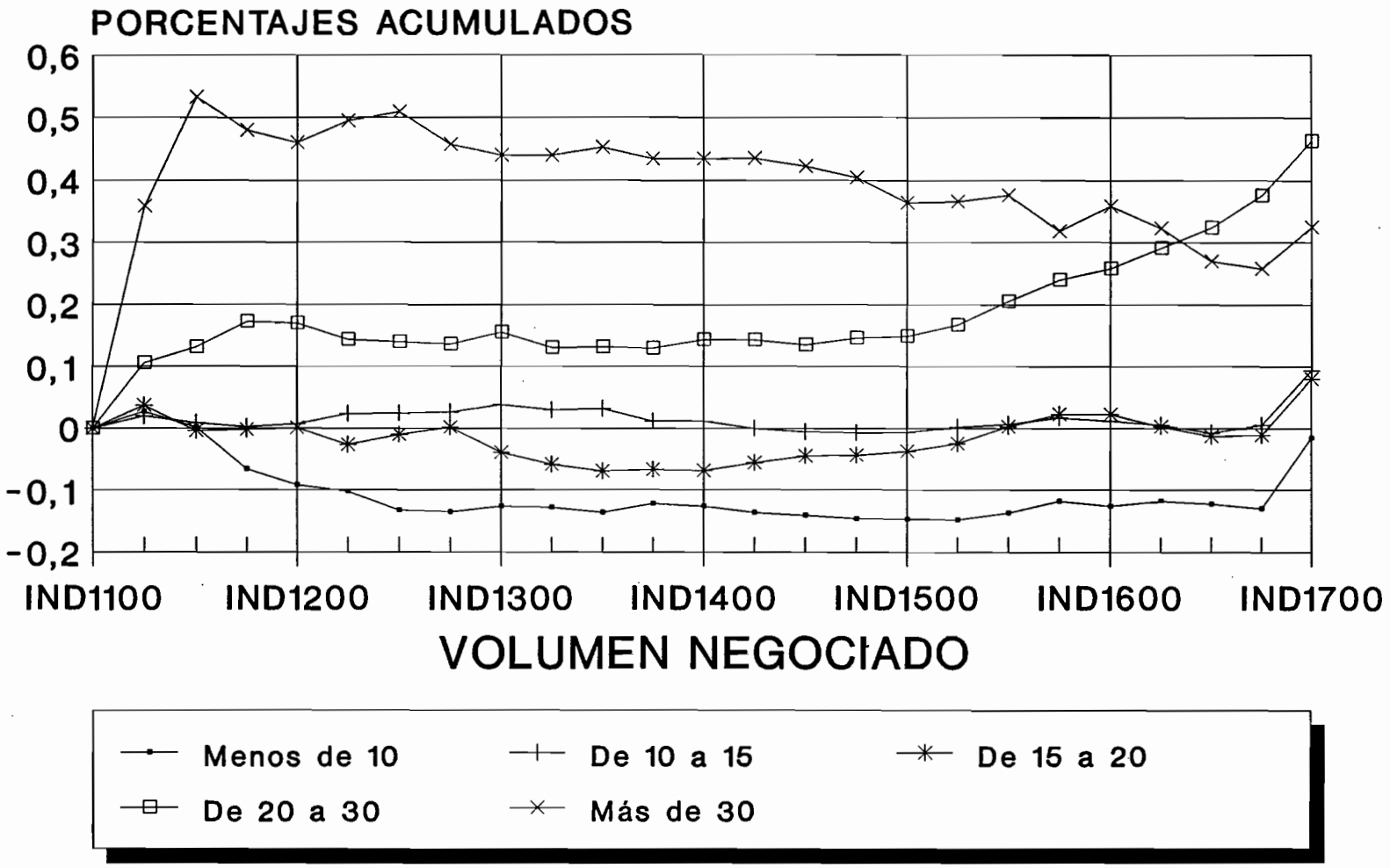
(Datos diarios con intervalos de 15 m.)



Febrero 92-Diciembre 93

RENDIMIENTOS ACUMULADOS MEDIOS DEL IBEX

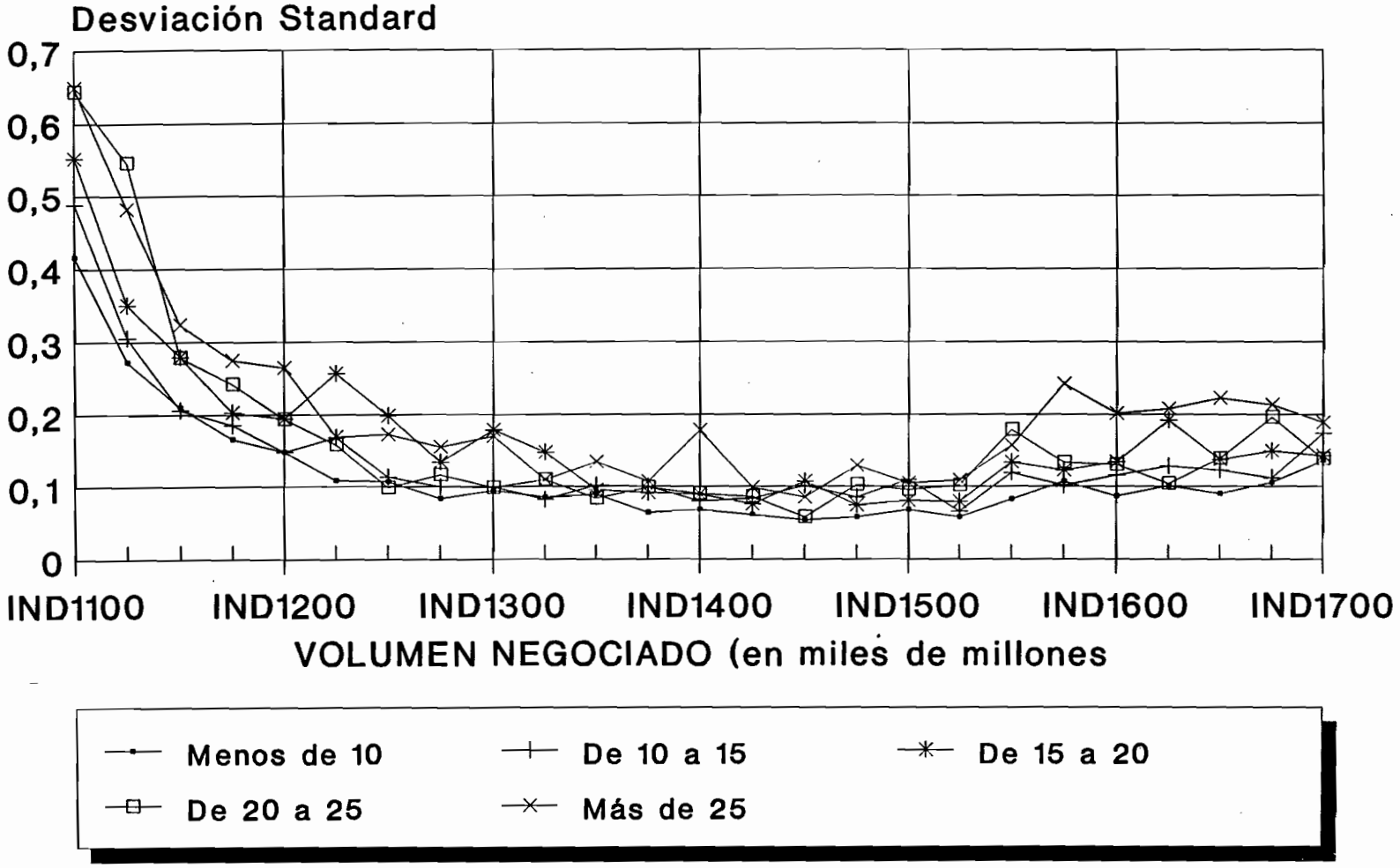
(Datos diarios con intervalos de 15 m.)



Febrero 92-Diciembre 93

EVOLUCION DE LA VOLATILIDAD DEL IBEX 35

(Datos diarios con intervalos de 15 m.)



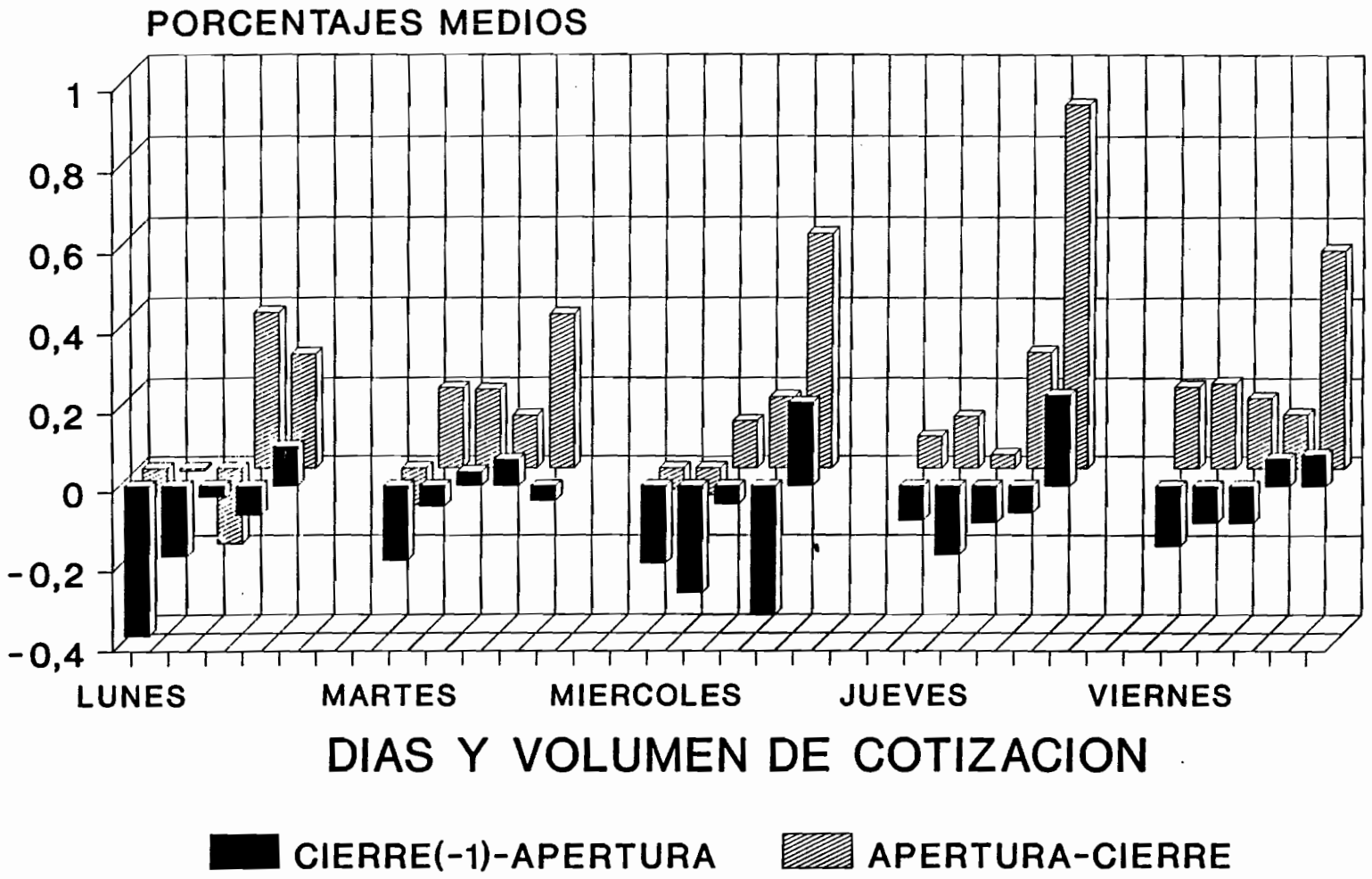
Febrero 92-Diciembre 93

MEDIA DE LOS RENDIMIENTOS POR DIAS Y VOLUMEN NEGOCIADO

	Cier.-Aper.	Aper.-Cier.	Cier.-Cier.
MEDIA	-0,0992	0,156974	0,058099
VARIANZA	0,299146	0,723715	1,168041
DEV.STD.	0,546943	0,850715	1,080759
MEDIAS			
LUNES < 10	-0,37538	-0,05778	-0,43277
LUNES 10-15	-0,17618	-0,00517	-0,17885
LUNES. 15-20	-0,02754	-0,18888	-0,21502
LUNES 20-25	-0,07375	0,39405	0,319388
LUNES > 25	0,100823	0,290344	0,392205
MEDIAS			
MARTES. < 10	-0,18745	-0,09242	-0,27959
MARTES. 10-1	-0,05083	0,205012	0,154731
MARTES.15-20	0,035754	0,200825	0,238058
MARTES.20-25	0,067012	0,135485	0,202148
MARTES > 25	-0,03692	0,39011	0,352565
MEDIAS			
MIERC. < 10	-0,19548	-0,05468	-0,24756
MIERC. 10-15	-0,27026	-0,06759	-0,33719
MIERC. 15-20	-0,04519	0,12142	0,075455
MIERC. 20-25	-0,32486	0,183151	-0,14352
MIERC. > 25	0,213055	0,589468	0,805519
MEDIAS			
JUEVES < 10	-0,08553	0,08236	-0,00285
JUEVES 10-15	-0,17286	0,132713	-0,03774
JUEVES 15-20	-0,09239	0,035474	-0,05406
JUEVES 20-25	-0,06738	0,296067	0,217578
JUEVES > 25	0,23352	0,907705	1,140664
MEDIAS			
VIERNES < 10	-0,15075	0,208814	0,058262
VIERNES 10-1	-0,09142	0,217818	0,126477
VIERNES 15-2	-0,09135	0,180534	0,089883
VIERNES 20-2	0,07139	0,139698	0,209627
VIERNES > 25	0,081307	0,548912	0,629753

RENTABILIDADES DIARIAS DEL IBEX35

(Por volumen de cotización)



Tramos de 5 mil millones (de <10 a >25)

MEDIA DE LOS RENDIMIENTOS POR DIAS Y VOLUMEN NEGOCIADO

	IND1100	IND1115	IND1130	IND1145	IND1200	IND1215	IND1230	IND1245	IND1300	IND1315	IND1330	IND1345	IND1400	IND1415	IND1430	IND1445	IND1500	IND1515	IND1530	IND1545	IND1600	IND1615	IND1630	IND1645	IND1700
MEDIA	-0,09945	0,0641	-0,00096	-0,00978	-0,00436	-0,00549	-0,00108	-0,00155	-0,00081	-0,01219	-0,00229	-0,00491	0,00108	-0,00288	-0,0026	-0,00067	-0,00078	0,009322	0,017602	0,014456	0,002511	-0,0009	-0,00623	0,01267	0,092019
VARIANZA	0,299125	0,147536	0,085179	0,044141	0,033947	0,033913	0,020551	0,013709	0,017609	0,011818	0,010323	0,008874	0,010032	0,008814	0,007958	0,007812	0,008943	0,008453	0,017488	0,018947	0,017583	0,022842	0,019828	0,022297	0,025851
DEV.STD.	0,546923	0,384104	0,255302	0,210099	0,184247	0,184156	0,143358	0,117085	0,132698	0,107779	0,101603	0,0942	0,100158	0,081326	0,089206	0,088364	0,094566	0,080331	0,132241	0,137649	0,1326	0,151136	0,140813	0,149321	0,160158
MEDIAS																									
LUNES < 10	-0,37536	0,080173	-0,08168	-0,06026	-0,02999	0,001572	-0,00703	-0,01202	-0,00745	-0,0091	-0,02854	0,026709	-0,03168	-0,0072	-0,01369	-0,02052	-0,01126	0,000402	0,003934	-0,0005	0,000576	0,026587	-0,0038	-0,00137	0,108137
LUNES 10-15	-0,17618	0,090768	0,000854	-0,04246	-0,01883	-0,00814	-0,00588	-0,00588	0,027717	-0,01136	-0,01294	-0,01839	-0,00787	-0,01809	-0,01127	-0,02262	0,009529	0,016153	-0,01162	0,028073	0,046931	-0,0306	-0,01395	0,003725	0,007614
LUNES. 15-20	-0,02754	0,05448	-0,08798	0,000536	-0,00615	-0,11297	-0,07691	-0,00786	-0,03637	-0,02849	0,010141	0,005326	-0,00307	0,011763	-0,01133	-0,00712	-0,01193	0,006848	0,030997	-0,01655	-0,01533	-0,01737	0,002204	0,004376	0,125389
LUNES 20-25	-0,07375	0,135966	0,211582	-0,02529	-0,06883	-0,10897	-0,02058	-0,03958	0,013958	-0,0298	-0,01552	-0,0286	0,063117	0,027429	-0,02855	0,015567	-0,01008	0,04845	0,022918	0,045083	0,027365	-0,00267	0,120808	0,018785	0,016641
LUNES > 25	0,100823	0,342293	0,056498	-0,02915	0,03131	-0,01156	0,007102	-0,06683	-0,17804	-0,00523	-0,00793	0,071224	-0,01875	-0,01136	-0,04966	0,014931	0,029719	-0,14872	0,03594	-0,03564	0,117936	-0,02709	0,008824	0,025604	0,13916
MEDIAS																									
MARTES. < 10	-0,16745	-0,0321	-0,03376	-0,05468	-0,04892	-0,04813	-0,09099	-0,00655	0,00305	0,001648	-0,00538	0,004008	0,027877	-0,00947	0,002287	0,008423	0,029671	-0,03095	0,029331	0,013869	0,018982	0,012848	-0,0061	-0,0217	0,141737
MARTES. 10-15	-0,05083	0,053721	-0,08123	0,006851	0,008539	-0,00223	0,010068	-0,01568	-0,00226	-0,01813	0,0081	-0,0029	0,00235	-0,00545	0,002066	0,017649	-0,01106	0,022278	0,04772	0,019296	-0,00881	-0,01471	0,005587	0,014502	0,125522
MARTES.15-20	0,035754	0,023764	0,023094	0,020979	-0,01929	0,041215	0,03207	-0,03269	-0,0148	0,025259	-0,02757	0,020738	-0,01083	-0,01259	0,0154	0,007224	0,002795	0,015523	0,039521	0,04313	0,000927	-0,02151	-0,01721	-0,01989	0,063516
MARTES.20-25	0,067012	-0,07309	-0,07799	-0,10333	-0,00981	0,047556	0,040399	0,027959	0,066434	-0,01436	-0,0115	0,040168	-0,01349	0,019229	-0,02911	0,03317	-0,01992	0,066349	-0,01072	-0,01483	0,049367	0,047782	0,016775	0,012337	0,044995
MARTES > 25	0,015719	0,184422	0,024752	-0,02599	0,028508	0,006858	0,058138	0,022334	0,06093	-0,02921	-0,02718	0,010688	-0,0003	0,013292	-0,01574	-0,00362	-0,03147	0,010389	-0,01518	-0,0392	0,063883	0,03089	-0,04342	0,060629	0,06592
MEDIAS																									
MIERC. < 10	-0,18548	-0,0551	-0,003	-0,09977	-0,01027	0,011628	-0,01118	0,021781	0,045931	0,000087	0,021585	-0,00535	0,000194	-0,0228	0,007825	0,021293	-0,00265	-0,00181	-0,00134	-0,0213	-0,04589	-0,01582	0,013608	-0,01289	0,108185
MIERC. 10-15	-0,27028	-0,01877	-0,01606	-0,00836	-0,03489	0,033586	-0,01909	0,003649	-0,00611	-0,02528	-0,01356	-0,02618	-0,00687	-0,00349	0,008513	-0,01694	-0,00075	0,012665	0,000186	-0,00935	-0,00541	0,00752	-0,00916	-0,01961	0,10389
MIERC. 15-20	-0,04519	0,107787	0,001335	0,05219	-0,02226	-0,10189	-0,00038	0,019343	-0,02073	-0,00669	-0,04954	-0,02602	0,013833	0,022101	0,009409	-0,02868	-9,2E-05	0,005459	-0,0327	0,037836	0,05956	0,054622	-0,01407	-0,01761	0,05985
MIERC. 20-25	-0,32486	0,091774	0,016979	0,094989	0,038899	-0,05675	-0,00623	-0,0401	-0,02308	0,005855	-0,02959	-0,04276	0,009384	-0,02704	0,003227	-0,05396	-0,03862	0,043294	0,005302	0,080223	-0,01294	-0,01089	-0,01534	0,080823	0,071804
MIERC. > 25	0,213055	0,269043	0,152411	-0,016	0,052451	-0,03203	-0,05948	-0,02661	0,072188	-0,00039	0,071109	-0,00605	-0,02341	0,012023	-0,0216	0,021948	-0,01026	-0,0083	0,022201	0,035593	-0,05213	0,078197	0,022928	-0,01881	0,048297
MEDIAS																									
JUEVES < 10	-0,08553	0,065492	-0,02025	-0,09775	0,009547	-0,00711	-0,02964	-0,00651	0,027487	-0,0046	0,01539	0,021195	0,000016	-0,00432	-0,01635	-0,01373	-0,00845	0,034863	0,02021	0,080803	-0,04591	0,000847	-0,0213	0,002957	0,080233
JUEVES 10-15	-0,17286	-0,01757	0,016574	0,038412	0,072393	-0,00647	-0,00107	-0,00222	0,018924	0,008533	-0,00011	-0,03939	-0,00581	0,014752	-0,01501	0,023705	0,004202	0,00636	0,030157	-0,00853	-0,03556	-0,04339	-0,03358	0,024258	0,082229
JUEVES 15-20	-0,09239	-0,00303	-0,06065	-0,02929	-0,03424	-0,04347	0,073478	0,014838	-0,031	-0,06728	0,014781	0,018636	-0,00061	0,027231	0,013978	0,015715	0,022116	0,033142	0,08368	0,021839	-0,04314	-0,07185	-0,02407	-0,00262	0,107042
JUEVES 20-25	-0,07609	0,291551	0,00904	-0,02907	-0,04519	-0,00057	0,013105	0,017912	-0,04907	0,006655	0,000114	0,053634	-0,08101	-0,00491	-0,00774	0,006273	0,014833	0,003974	0,145306	-0,02181	-0,01215	-0,08402	-0,02532	0,034995	0,040139
JUEVES > 25	0,23352	0,256821	0,148628	0,108707	-0,08188	0,055507	-0,05669	-0,05283	0,009248	-0,02613	0,00537	0,00163	0,098433	-0,02014	0,009664	0,026021	0,022326	0,061778	0,016348	-0,00024	0,07816	0,05747	0,010133	-0,04967	0,225374
MEDIAS																									
VIERNES < 10	-0,15075	0,013554	0,08873	-0,02601	-0,03425	-0,01549	-0,00166	0,010601	0,011303	0,020498	-0,02114	0,007965	0,001621	-0,00847	0,015982	-0,00926	-0,01778	0,007352	-0,00639	0,050628	0,011191	-0,01874	-0,00378	-0,00368	0,135812
VIERNES 10-15	-0,09142	0,005641	0,006048	-0,02106	0,009492	0,045669	0,021985	0,020501	0,025562	0,005471	0,02534	-0,01354	0,013255	-0,04049	-0,01252	-0,00694	0,001428	-0,00917	-0,03258	0,027809	-0,02187	0,033675	-0,01864	0,044773	0,108088
VIERNES 15-20	-0,09135	0,005729	-0,10869	-0,04258	0,110049	0,061532	0,042359	0,078255	-0,11483	-0,03118	0,005355	-0,01099	-0,00536	0,01978	0,022725	0,017003	0,01774	0,002584	0,011867	0,003641	-0,0087	-0,04613	-0,02255	0,056395	0,114699
VIERNES 20-25	0,07139	-0,19519	0,017814	0,152205	0,018181	-0,0364	0,005429	0,041428	0,018719	-0,0647	0,00778	-0,06591	-0,03243	-0,01058	-0,02878	0,010462	0,007144	0,021892	0,033867	0,01867	0,010196	0,076812	0,046016	0,019757	0,070217
VIERNES > 25	0,081307	0,246973	0,02474	-0,07921	0,018103	0,033191	0,051792	-0,0379	0,014646	-0,01283	0,032893	-0,00174	0,00731	0,014451	0,004048	0,006267	-0,01645	-0,03111	0,045497	0,030279	0,009033	-0,03565	0,037072	0,116985	0,071976
MEDIAS ACUM.																									
LUNES < 10	0	0,080173	0,018494	-0,04178	-0,07175	-0,07018	-0,0772	-0,08923	-0,09668	-0,10578	-0,13432	-0,10761	-0,13926	-0,14648	-0,16016	-0,1807	-0,19196	-0,19155	-0,18762	-0,18812	-0,18754	-0,16096	-0,16476	-0,16614	-0,058
LUNES 10-15	0	0,090768	0,091423	0,048945	0,030112	0,023968	0,018112	0,012232	0,039949	0,02859	0,015653	-0,00274	-0,01061	-0,0287	-0,03996	-0,06258	-0,05305	-0,0389	-0,04851	-0,02044	0,026489	-0,00411	-0,01806	-0,01434	-0,00673
LUNES. 15-20	0	0,05448	-0,0335	-0,03296	-0,04111	-0,15408	-0,23099	-0,23885	-0,27522	-0,30371	-0,29357	-0,28824	-0,29131	-0,27955	-0,29088	-0,298	-0,30993	-0,30308	-0,27208	-0,28883	-0,30396	-0,32133	-0,31913	-0,31475	-0,18936
LUNES 20-25	0	0,135966	0,347558	0,322265	0,253435	0,144468	0,125883	0,086303	0,100261	0,070457	0,054936	0,026335	0,089452	0,116881	0,090331	0,105899	0,095824	0,144274	0,16719	0,212274	0,239639	0,236973	0,357779	0,376564	0,393205
LUNES > 25	0	0,342293	0,398791	0,369645	0,400955	0,389392	0,396494	0,32966	0,151623	0,148397	0,138469	0,209693	0,192939	0,161575	0,131684	0,146825	0,176544	0,027825	0,063764	0,026125	0,146061	0,118974	0,127796	0,153402	0,292562
MEDIAS ACUM.																									
MARTES. < 10	0	-0,0321	-0,06585	-0,12053	-0,16945	-0,21556	-0,30657	-0,31312	-0,31007	-0,30843	-0,31381	-0,3098	-0,28212	-0,2916	-0,28931	-0,28089	-0,25122	-0,28218	-0,25263	-0,23896	-0,22	-0,20715	-0,21326	-0,23496	-0,09322
MARTES. 10-15	0	0,053721	-0,00751	-0,00068	0,007878	0,005645	0,015711	0,000051	-0,00221	-0,01833	-0,01023	-0,01313	-0,01078	-0,01623	-0,01417	0,003682	-0,0074	0,014882	0,062603	0,081899	0,073294	0,058582	0,064169	0,07867	0,204193
MARTES.15-20	0	0,023764	0,046857	0,067836	0,048548	0,089781	0,121631	0,089137	0,074333	0,099591	0,07202	0,092757	0,081932	0,069345	0,084748	0,091969	0,094764	0,110287	0,149808	0,192939	0,193768	0,172253	0,155043	0,135149	0,198684
MARTES.20-25	0	-0,07309	-0,15106	-0,25441	-0,26422	-0,21666	-0,17826	-0,1463	-0,08187	-0,09825	-0,10775	-0,06758	-0,08108	-0,08185	-0,09096	-0,05779	-0,07771	-0,01136	-0,02208	-0,0369	0,012482	0,060224	0,076999	0,089336	0,134331
MARTES > 25	0	0,184422	0,209174	0,183186	0,211694	0,218552	0,27669	0,299025	0,359955	0,330742	0,303567	0,314255	0,313953	0,327245	0,311505	0,307882	0,278412	0,288801	0,271622	0,232426	0,296308	0,327199	0,263776	0,344407	0,410327
MEDIAS ACUM.																									
MIERC. < 10	0	-0,0551	-0,05611	-0,15788	-0,16815	-0,15652	-0,16787	-0,14589	-0,09996	-0,09987	-0,07829	-0,08364	-0,08344	-0,10624	-0,09842	-0,07712	-0,07977	-0,08139	-0,08272	-0,10402	-0,14991	-0,16553	-0,15192	-0,1648	-0,05662
MIERC. 10-15	0	-0,01877	-0,03283	-0,04119	-0,07607	-0,04249	-0,06158	-0,05793	-0,06404	-0,08931	-0,10287	-0,12903	-0,1359	-0,1394	-0,13088	-0,14783	-0,14857	-0,13591	-0,13572	-0,14507	-0,15049	-0,14297	-0,15214	-0,17176	-0,06787
MIERC. 15-20	0	0,107787	0,109102	0,161292	0,139037	0,037143	0,036781	0,056104	0,035372	0,028682	-0,02086	-0,04688	-0,03305	-0,01094	-0,00154	-0,03022	-0,03031	-0,02485	-0,05755	-0,01971	0,039849	0,094471	0,080405	0,06278	0,122641
MIERC. 20-25	0	0,091774	0,108753	0,203742	0,242841	0,185889	0,177662	0,137558	0,114478	0,120334	0,09074	0,047975	0,057358	0,030315	0,033543	-0,02042	-0,05904	-0,01575	-0,01045	0,069778	0,056837	0,045948	0,030613	0,111235	0,18284
MIERC. > 25	0	0,269043	0,421454	0,403456	0,455907	0,423878	0,36442	0,337807	0,409995	0,409606	0,460717	0,474669	0,451284	0,463286	0,441691	0,463638	0,453378	0,445078	0,467279	0,502871	0,450737	0,529934	0,55286	0,534053	0,582351
MEDIAS ACUM.																									
JUEVES < 10	0	0,065492	0,04524	-0,05251	-0,04297	-0,05007	-0,07971	-0,08622	-0,05875	-0,06335	-0,04796	-0,02678	-0,02674	-0,03107	-0,04742	-0,06114	-0,0696	-0,03493	-0,01472	0,066081	0,020178	0,020823	-0,00048	0,002478	0,082709
JUEVES 10-15	0	-0,01757	-0,001	0,037414	0,109807	0,103338	0,102263	0,100043	0,118967	0,127499	0,127393	0,088002	0,082191	0,096943	0,08193	0,105634	0,109836	0,116196	0,146353	0,137824	0,102248	0,058858	0,02527	0,049527	0,131757
JUEVES 15-20	0	-0,00303	-0,06369	-0,09298	-0,12722	-0,17069	-0,09722	-0,08238	-0,11338	-0,18067	-0,16589	-0,14725	-0,14786	-0,12063	-0,10665	-0,09093	-0,06882	-0,03568	0,048004	0,069843	0,026706	-0,04494	-0,08901	-0,07163	0,035413
JUEVES 20-25	0	0,291551	0,300581	0,271516	0,226332	0,225763	0,238867	0,25878	0,207712	0,214367	0,214481	0,268115	0,2071	0,202192	0,194451	0,200724	0,215357	0,218332	0,364638	0,342824	0,330677	0,246862	0,22134	0,256335	0,296474
JUEVES > 25	0	0,256821	0,405449	0,514158	0,432272	0,487779	0,431094	0,378287	0,387515	0,361383	0,366753	0,368383	0,466817	0,446674	0,456338	0,482359	0,504685	0,568483	0,58281	0,582567	0,660727	0,716197	0,72833	0,678663	0,904037
MEDIAS ACUM.																									
VIERNES < 10	0	0,013554	0,102264	0,076278	0,042028	0,026543	0,024887	0,035466	0,04677	0,067268	0,046132	0,054097	0,055718	0,047247	0,063229	0,053972	0,036187	0,043539	0,037148	0,087776	0,099967	0,080227	0,076448	0,072766	0,208578
VIERNES 10-15	0	0,005641	0,011689	-0,00939	0,000097	0,045787	0,067752	0,088253	0,113814	0,119286	0,144625	0,131083	0,144338	0,103848	0,091331	0,084391	0,085819	0,076645	0,044067	0,071876	0,050001	0,083676	0,06504	0,109814	0,2179
VIERNES 15-20	0	0,005729	-0,10296	-0,14554	-0,03549	0,02604	0,068399	0,146654	0,031825	0,000643	0,005997	-0,00499	-0,01035	0,009409	0,032134	0,049137	0,066877	0,069461	0,081128	0,084769	0,078065	0,031937	0,009386	0,065761	0,18048
VIERNES 20-25	0	-0,19519	-0,17737	-0,02517	-0,00698	-0,04339	-0,03796	0,003489	0,022188	-0,04251	-0,03475	-0,10066	-0,13309	-0,14367	-0,17245	-0,16198	-0,15484	-0,13315	-0,09928	-0,08061	-0,07042	0,006395	0,052413	0,072169	0,142388
VIERNES > 25	0	0,246973	0,271713	0,192498	0,208601	0,241792	0,293585	0,255688	0,270334	0,257708	0,290602	0,288859	0,296169	0,31082	0,314668	0,320933	0,304483	0,273378	0,318875	0,349154	0,358187	0,322541	0,359613	0,476598	0,548574